1996

Subdivision Street Requirements

... for streets to be added to the secondary system of state highways.

We Keep Virginia Moving

VDOT Vision Statements

We Keep Virginia Moving VDOT

Purpose: *We keep Virginia moving.*

Mission: We will become the most effective customer-oriented public agency in Virginia by the year 2000.

- People will recognize that our transportation system represents the highest standards of safety and quality.
- We will maintain the public trust, and treat public dollars with utmost care.
- We will be a leader in utilizing innovation and technology to deliver our products and services.
- We will use the best business practices to get our jobs done.
- We are committed to making VDOT a great place to work.
- We will enhance economic opportunities while preserving the beauty, natural resources, and heritage of Virginia.

When you ask people to name the top transportation agency in the country they will say VDOT.

Values:

- Put safety in everything we do.
- Listen to customers and demonstrate that we care about their needs and solving their problems.
- Do the things you know are the right things to do.
- Use everybody's talents to solve problems.
- Be honest, open, and fair.
- Respect one another and encourage individual development.

The employees of the Virginia Department of Transportation developed these statements as the basis of our vision for the future. In addition, they serve as the reference points we use today as we proceed toward our goal for tomorrow. The 1996 Subdivision Street Requirements encompass this vision and VDOT's employees are mindful of it when applying these regulations.

David R. Gehr, Commissioner

VIRGINIA DEPARTMENT OF TRANSPORTATION

SUBDIVISION STREET REQUIREMENTS

(Regulation 24 VAC 30-90-10 et seq.)

These requirements implement the authority of the Commonwealth Transportation Board, pursuant to Sections 33.12(3), 33.1-69, 33.1-198, and 33.1-229 of the Code of Virginia.

REGULATION APPROVAL

The following resolution, adopted by the Commonwealth Transportation Board on October 21, 1995, approved the requirements prescribed in this document. Further, the regulation was subject to final adoption under provisions of the Administrative Process Act.

RESOLUTION

WHEREAS, the Commonwealth Transportation Board is authorized, under Sections 33.1-12, 33.1-69, and 33.1-229 of the Code of Virginia, 1950, as amended, to establish appropriate requirements for additions to the Secondary System for maintenance; and

WHEREAS, in the interest of public welfare and safety, the Department of Transportation has, since 1949, prescribed minimum requirements that new subdivision streets must satisfy for acceptance as part of the secondary system; and

WHEREAS, these requirements are periodically revised as necessary to properly address changes in conditions throughout the Commonwealth, the last such revision being adopted by the Board on August 17, 1989; and

WHEREAS, Department staff was directed to draft suggested changes to those requirements and solicited the best opinions of a select Advisory Committee, composed of qualified representatives of local governments, the development community, and state housing agencies; and

WHEREAS, the public, local governments, and the development industry were afforded ample opportunity to review and comment on the proposed revision; and

WHEREAS, all comments received from the public involvement process have been duly considered and evaluated by the Department and the Advisory Committee, with many of the suggestions and recommendations being fully or partially incorporated into the final draft revision of these requirements; and

WHEREAS, the proposed revision of these requirements was prepared in full compliance with the provisions of the Administrative Process Act; and

WHEREAS, it is the sense of the Board that the present Subdivision Street Requirements should be revised to provide for changing conditions and to the enhance the level of safety, service, and public welfare associated with subdivision streets;

NOW, THEREFORE, BE IT RESOLVED, that the attached revision to the Subdivision Street Requirements is hereby adopted and shall become effective January 1, 1996, subject to final adoption pursuant to the Administrative Process Act; and

BE IT FURTHER RESOLVED, that during the period January 1, 1996, through June 30, 1996, the Department will consider the approval of streets designed in accordance with either the 1990 requirements or those herein adopted. Any street design initially submitted for the Department's approval after June 30, 1996, shall be in accordance with the requirements herein adopted.

MOTION CARRIED, October 21, 1995.

FOREWORD

This document comprises the Virginia Department of Transportation's Subdivision Street Requirements, effective January 1, 1996. This is a regulation of the Commonwealth Transportation Board, adopted under the provisions of the Commonwealth's Administrative Process Act. This is the latest in a series of such requirements that were first adopted in 1949.

Subdivision Street Requirements is a reference source for parties involved in the planning, design, development, and regulation of residential, commercial, and industrial subdivisions. Its provisions establish the minimum state criteria that new subdivision streets must satisfy for acceptance and maintenance by the Department of Transportation as part of the secondary system of state highways.

Local subdivision ordinances may include additional or more stringent requirements than these. The Department of Transportation recommends subdividers of land consult directly with local officials and the department's responsible resident engineer before beginning the subdivision process.

These requirements apply in:

- All counties of the Commonwealth, other than Arlington County and Henrico County.

These requirements do not apply in the Commonwealth's independent cities or in towns, unless specifically referenced in the subdivision ordinance of the local governing body. In towns where these requirements do apply and which operate under §33.1-82, Code of Virginia, the minimum provisions set forth herein are subject to the minimum criteria specified in that statute.

Table of Contents

Table of Contents

Table of Contents

Forenote: Italicized portions of text, including all of section 24 VAC 30-90-160 D.1, are administrative supplements to the Subdivision Street Requirements. Dimensions and measurements in this document are presented in Imperial units with acceptable, equivalent metric units appearing in brackets (e.g. {6m}). Imperial units reflect provisions adopted by the Commonwealth Transportation Board and subsequently approved under the Administrative Process Act.

CHAPTER 90.
SUBDIVISION STREET REQUIREMENTS.

PART I.
GENERAL PROVISIONS.

24 VAC 30-90-10. Definitions.

The following words and terms, when used in these requirements, shall have the following meaning, unless the context clearly indicates otherwise:

"AASHTO" means the American Association of State Highway and Transportation Officials.

"ADT" means average daily traffic count (see "Projected Traffic").

"Apartment building" means a building for residential occupancy containing more than two dwelling units which may be rented or occupied by the owner.

"Board" means the Commonwealth Transportation Board.

"Chief engineer" means the employee of the department who is responsible for the design, construction and maintenance of the systems of state highways.

"Commissioner" means the chief executive officer of the Virginia Department of Transportation and the Vice-Chairman of the Commonwealth Transportation Board for the Commonwealth of Virginia.

"Complete development" (land) means the utilization of the available areas in a manner as to realize its highest density for the best potential use based on current zoning, pending rezoning, the adopted comprehensive plan of the governing body, or the customary use of similar parcels of land.

"Complete development" (streets) means the development of a subdivision street in full compliance with all applicable provisions of these regulations.

"County official" means the representative of the governing body appointed to serve as its agent in matters relating to subdivisions.

"Cul-de-sac" means a street with only one outlet and having an appropriate turnaround for a safe and convenient reverse traffic movement.

"Dam" means an embankment or structure intended or used to impound, retain, or store water, either as a permanent pond or as a temporary storage facility.

"Department" means the Virginia Department of Transportation.

"Design manual" means the department's current Road Design Manual, Location and Design Division.

"Design speed" means a speed selected for purposes of design and correlation of those features of a street such as curvature, super elevation, and sight distance, upon which the safe operation of vehicles is dependent.

"Developer" means an individual, corporation, or registered partnership engaged in the subdivision of land.

"District administrator" means the employee of the department assigned the overall supervision of the departmental operations in each of the Commonwealth's nine construction districts.

"Drainage manual" means the department's current Drainage Manual, Location and Design Division.

"Dwelling unit" means a structure or part of a structure containing sleeping, kitchen, and bathroom facilities that is suitable for occupancy as a home or residence by one or more persons.

"Easement" means a grant of a right to use property of an owner for specific, limited use or purpose.

"Extrinsic structure" means any structure whose primary mission is not essential for the operation of a subdivision street. Customarily, an extrinsic structure is intended to separate the movement of people or products (e.g., utilities, nonlicensed motor vehicles, golf carts, pedestrians, etc.) from those using the street.

"Functional classification" means the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.

"Governing body" means the board of supervisors of the county.

"Intersection" means the juncture of two or more streets at which point there are three or more legs.

"ITE Trip Generation" means the current edition of Trip Generation, an informational report of the Institute of Transportation Engineers.

"Level of service" means a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and passengers. For the purposes of these requirements, the applicable provisions of the current Highway Capacity Manual, Transportation Research Board, shall serve as the basis for determining "levels of service."

"Level terrain" means that condition where highway sight distances, as governed by both horizontal and vertical restrictions, are generally long or could be made so without construction difficulty or major expense.

"Loop street" means a street whose two outlets are to the same street.

"Minimum entrance standards" means the department's current Minimum Standards of Entrances to State Highways, Traffic Engineering Division.

"Mountainous terrain" means that condition where longitudinal and traverse changes in the elevation of the ground with respect to the road or street are abrupt and where benching and side hill excavation are frequently required to obtain acceptable horizontal and vertical alignment.

"Neotraditional development" means a type of subdivision that creates a neighborhood or community design with qualities of a traditional small town, combining a mix of uses that may include retail establishments, offices, civic buildings, public squares, and multi-family and single-family housing, all within walking distance of one another. These developments may include a variety of buildings and land use densities along the same street. Street layout may follow a grid pattern using narrow streets having multiple connections to surrounding neighborhoods. These developments may be referred to as "villages" or "hamlets" within the ordinances of the governing body.

"Nonresidential street" means a subdivision street adjacent to property that is anticipated to develop for purposes other than residential use.

"Office building" means a building that is used primarily for conducting business transactions other than retail sales.

"Pavement design guide" means the current edition of the Pavement Design Guide for Subdivision and Secondary Roads in Virginia, Materials Division and Transportation Research Council.

"Permit manual" means the department's current Land Use Permit Manual, Maintenance Division.

"Phased development" (streets) means the method outlined in 24 VAC 30-90-140 whereby the acceptance of certain subdivision streets into the secondary system of state highways may be considered prior to their complete development in accordance with all applicable requirements.

"Plans" means the standard drawings, including profile and roadway typical section, which show the location, character, dimensions and details for the proposed construction of the subdivision street.

"Plat" means the schematic representation of the land divided or to be divided.

"Private streets" means subdivision streets which are not intended to be accepted into the secondary system of state highways.

"Projected traffic" means the number of vehicles, normally expressed in average daily traffic (ADT), forecast to travel over the segment of the subdivision street involved.

"PUD" means planned unit development which is a form of development characterized by unified site design for a variety of types and densities of development and as more specifically defined in § 15.1-430(s) of the Code of Virginia.

"Requirements" means the design, construction, and related administrative considerations herein prescribed for the acceptance of a subdivision street into the secondary system of state highways pursuant to § 33.1-229 of the Code of Virginia.

"Resident engineer" means the employee of the department assigned to supervise departmental operations within a specified geographical portion of the Commonwealth, consisting of one to four counties.

"Residential street" means a subdivision street adjacent to property that is anticipated to develop as single-family residences, apartment buildings, or other similar dwelling structures.

"Right-of-way" means the land, property, or interest therein, usually in a strip, acquired for or devoted to a public street designated to become part of the secondary system of state highways.

"Roadway" means the portion of the road or street within the limits of construction and all structures, ditches, channels, etc. necessary for the correct drainage thereof.

"Rolling terrain" means that condition where the natural slopes consistently rise above and fall below the road or street grade and where occasional steep slopes offer some restriction to normal horizontal and vertical roadway alignment.

"Secondary system of state highways" means those public roads, streets, bridges, etc., as established by §§ 33.1-67 and 33.1-68 of the Code of Virginia that are under the supervision of and maintained by the department.

"Shopping center" means a building or buildings containing two or more stores that are used primarily for retail sales but may include commercial trade or professional uses.

"Single-family residence" means a structure, other than an apartment building, maintained and used as a single dwelling unit or any dwelling unit that has direct access to a street and shares neither heating facilities, hot water equipment, nor any other essential facility or service with any other dwelling unit.

"Specifications" means the department's current Road and Bridge Specifications, including related supplemental specifications and special provisions.

"Standard crown" means the cross slope of the roadway pavement and shall be 1/4 inch per foot *{2%}*, unless otherwise approved by the resident engineer.

"Standards" means the applicable drawings and related criteria contained in the department's current Road and Bridge Standards.

"State secondary roads engineer" means the employee of the department assigned to manage and administer the operations of the Secondary Roads Division to carry out the statewide secondary roads program.

"Subdivision" means the division of a lot, tract, or parcel into two or more lots, plats, sites, or other division of land for the purpose, whether immediate or future, of sale or of building development. Any resubdivision of a previously subdivided tract or parcel of land shall also be interpreted as a "subdivision." The division of a lot or parcel permitted by §§ 15.1-466 A 12 and 15.1-466 A 13 of the Code of Virginia will not be considered a "subdivision" under this definition, provided no new road or street is thereby established. However, any further division of such parcels shall be considered a "subdivision."

"Subdivision street" means a public way for purposes of vehicular travel, including the entire area within the right-of-way, that results from the subdivision of land. Such streets developed in accordance with these requirements shall be eligible for addition to the secondary system of state highways pursuant to § 33.1-229 of the Code of Virginia.

"Swale" means a broad depression within which storm water may drain during inclement weather, but which does not have a defined bed or banks.

"Through street" means a street which provides access between two other streets.

"Traveled way" means the portion of the subdivision street designated for the movement of vehicles, exclusive of shoulders, parking areas, turn lanes, etc.

"VDOT" means the Virginia Department of Transportation.

"Watercourse" means a definite channel with bed and banks within which water flows, either continuously or in season.

24 VAC 30-90-20. Applicability.

These requirements apply to all subdivision streets designated to become part of the secondary system of state highways. The department's review and approval shall apply only to streets proposed for addition to the secondary system. Any plans submitted for review which contain only private streets shall be returned with a notation as to the reason.

This regulation is not intended to be a comprehensive manual for the design and construction of subdivision streets. Its purpose is to govern the aspects of subdivision street development that set them apart from those considerations customarily applied to highway projects. However, in all other matters regarding the design and construction of these streets, the relevant requirements of the

standards, design manual, specifications, pavement design guide and associated instructions shall govern.

24 VAC 30-90-30. Continuity of public street system.

The continuity of a publicly maintained street system is a prerequisite to the addition of any subdivision street into the secondary system of state highways. A street may only be accepted for state maintenance if it is the continuation of the network of public streets whose maintenance has been officially accepted by the department or, if appropriate, a city, town or county.

24 VAC 30-90-40. Large-lot-size subdivision.

Notwithstanding any provision of an ordinance adopted by the governing body that exempts certain large-lot-size subdivisions from its definition of subdivision, any street proposed for addition to the secondary system of state highways shall comply with applicable requirements as herein provided.

24 VAC 30-90-50. Service requirements.

A. A street may only be accepted into the secondary system of state highways if it renders sufficient public service to justify the expenditure of public funds for its subsequent maintenance. For the purpose of these requirements, public service may include, but is not necessarily limited to, one or more of the following situations:

1. Serves three or more occupied units of varied proprietorship with a unit being a single-family residence, owner occupied apartment, manufactured home park, or other similar facility.

2. Constitutes a connecting link between other streets which qualify from the point of public service.

3. Provides an extension of a street to the subdivision boundary to facilitate the continuity of possible adjacent development, if required by local ordinance.

4. Serves as access to schools, churches, public sanitary landfills, public recreational facilities, or similar facilities open to public use.

5. Serves at least 100 vehicles per day generated by an office building, industrial site, or other similar nonresidential land use in advance of the occupancy of three or more such units of varied proprietorship. Any addition under this provision shall be limited to the segment of a subdivision street that serves this minimum projected traffic and has been developed in compliance with 24 VAC 30-90-60 D.

B. Streets that serve shopping centers or rental apartment buildings do not normally qualify for addition to the system because the primary service they provide is to the owner, who stands to profit, rather than the tenant or customer. However, when a street serves as the principal access to rental apartment buildings, it may be considered to provide public service if unrestricted public use is permitted and maintenance continuity is practical. Entrances and the internal traffic circulation system of shopping centers do not qualify. However, a street that serves a shopping center may qualify if it is a through street and it is deemed by the department to provide a public service.

C. There may be other sets of circumstances that could constitute public service. Consequently, any question regarding unclear situations should be referred through the resident engineer to the state secondary roads engineer for resolution.

24 VAC 30-90-60. Administrative procedure.

A. Conceptual subdivision sketch.

Prior to preparation of plats or plans, or both, the developer shall prepare a conceptual subdivision plan to determine functional classification, projected traffic, and terrain. (See 24 VAC 30-90-130 A, B, and C.)

B. Plan submission.

Plats or plans, or both, together with other pertinent data as herein prescribed, shall be submitted to the responsible resident engineer for all proposed subdivisions whose streets are intended to be added to the secondary system of state highways. A listing of the locations and jurisdictions of the department offices is shown in 24 VAC 30-90-350.

C. Plan review.

Upon receipt of the plats or plans, or both, the resident engineer will arrange for the appropriate review to determine compliance with all applicable requirements. The general procedure for this review is prescribed in 24 VAC 30-90-340.

D. Plan approval.

The resident engineer will advise the appropriate county official and the developer, if applicable, as to the results of the review.

1. If the street development proposed by the plats or plans, or both, is determined to be in compliance with these requirements, the resident engineer will provide written confirmation of this finding. This action signifies the resident engineer's approval of the street design shown on the plats or plans, as submitted. Any subsequent revision, additions, or deletions thereto shall require specific written approval of the resident engineer for each such change.

2. Where the revision of the submitted plats or plans is determined necessary, the resident engineer will list the required changes in a written response to the county official and the developer, if applicable. Upon completion of the specified revisions, the plats or plans will be resubmitted for review and approval by the resident engineer as prescribed in 24 VAC 30-90-340.

E. Street acceptance.

Upon completion of the subdivision street construction, the resident engineer will initiate its acceptance into the secondary system of state highways provided:

1. The developer dedicates the prescribed right-of-way to public use.

2. The street has been constructed in accordance with the applicable specifications, standards and the plats or plans approved by the resident engineer.

3. The street renders a public service as prescribed in 24 VAC 30-90-50. However, in the event a street meets provisions 1, 2, and 4 of this subsection but does not appear

to meet the public service requirements of 24 VAC 30-90-50, the resident engineer shall submit a complete report to the state secondary roads engineer for review prior to a final determination deferring acceptance.

4. The street has been properly maintained since its completion.

5. The developer furnishes the surety and maintenance fee, if applicable, in accordance with 24 VAC 30-90-160.

6. The governing body requests, by proper resolution which includes the guarantee of an unrestricted and unencumbered right-of-way as dedicated, the department's acceptance of the street into the secondary system.

Upon the department's determination that the requested addition is in compliance with the applicable provisions of these requirements, the governing body will be officially advised of the street's acceptance into the secondary system of state highways and the effective date of such action. This notification serves as the resident engineer's authority to begin maintenance thereon.

24 VAC 30-90-70. Discretionary authority.

The department's resident engineers are authorized considerable discretionary authority in the application of the geometric standards relative to alignment and grade for streets functionally classified as "local." Such judgments should take into consideration the individual situation, but in no instance are the safety features, structural integrity, or traffic capacities prescribed by these requirements to be sacrificed. Meandering alignment and rolling grades are satisfactory, provided adequate stopping sight distances and reasonable alignment and gradients are provided to safely accommodate the projected traffic at the design speed.

24 VAC 30-90-80. Effect of legislation.

If subsequent legislation is enacted that conflicts with any provision of these requirements, the legislative provisions shall govern. As of its effective date such legislation shall take precedence over any conflicting interpretations or decisions rendered by department personnel prior to the enactment of the legislation. However, such action shall not affect the validity of these requirements as a whole, or any part thereof, other than the specific provision involved. (See § 9-6.14:5.1. of the Code of Virginia.)

24 VAC 30-90-90. Entrance permits.

An entrance permit is required by the general rules and regulations of the Commonwealth Transportation Board for any form of access to state maintained roads, including the connection of a subdivision street. Such a connection shall comply with applicable commercial entrance requirements of the department's Permit Manual and Minimum Entrance Standards.

Due to the wide variation in prevailing conditions, each location shall be evaluated individually to determine exact requirements. Therefore, it is incumbent upon the developer or his designee to apply for any required entrance permit at the appropriate time to insure the desired completion of the development. Such application shall be made to the resident engineer and commensurate with the approved plats or plans for the subdivision.

24 VAC 30-90-100. Appeal to district administrator.

The district administrator is authorized to consider and render a ruling on unresolved differences of opinion between the developer and the resident engineer that pertain to the interpretation and application of these requirements.

To obtain this review, the developer shall provide the district administrator with a copy to the county official, a written request for such action, including a brief description of any unresolved issue. After reviewing all pertinent information, the district administrator will advise the developer in writing, with a copy to the county official, as to the decision relative to the appeal. The developer may further appeal the district administrator's decision to the chief engineer for review and disposition as he deems appropriate. A final appeal may be made to the commissioner.

24 VAC 30-90-110. Precedent of local subdivision ordinance.

Where the requirements of the subdivision ordinance adopted by the governing body equal or exceed the requirements herein prescribed, they shall become the department's requirements in that area and govern.

24 VAC 30-90-120. Applicable requirements of other regulatory agencies.

Should a subdivision street proposed for acceptance into the secondary system of state highways be subject to provisions of any regulatory agency pertaining to the maintenance, control, or operation of the completed street, the developer shall provide the resident engineer with a copy of such requirements at the time its addition is requested.

PART II.

SPECIFIC PROVISIONS.

24 VAC 30-90-130. Design requirements.

A. Functional classification.

1. Policy.

The characteristics and magnitude of the service to be provided, as herein defined, shall be the basis for the department's determination of the functional classification for each subdivision street intended for acceptance into the secondary system.

2. Criteria.

Urban and rural areas have fundamentally different characteristics. Consequently, urban and rural functional systems are classified separately.

a. Urban areas. This designation shall apply to the urbanized areas of Virginia so identified by the U.S. Bureau of the Census (e.g., Northern Virginia, Fredericksburg, Richmond, Hampton Roads, Tri-Cities, Roanoke, Lynchburg, Danville, Charlottesville, Bristol, and Kingsport).

b. Rural areas. Those areas outside the boundaries of urban areas.

3. Functional systems.

a. Rural.

(1) Principal arterial. The most significant streets in the area which serve long distance travel demands such as statewide and interstate travel. Provide service to major centers of activities, constitute the highest traffic volume corridors, carry the major portion of the area's through traffic, and provide continuity between other arterials.

(2) Minor arterial. Streets which interconnect and supplement the principal arterial system with a greater emphasis on land access and a lower level of traffic mobility. They are intended as routes that generally have minimum interference to through traffic and provide intracommunity service.

(3) Major collector. These streets provide service to large communities or other major traffic generators not served by the arterial system. They provide links to higher classified routes and serve as important intracounty travel corridors.

(4) Minor collector. Streets that collect traffic from local streets and distribute it to the arterial system. These streets provide land access service and traffic circulation within residential, commercial, and industrial areas.

(5) Local. These streets provide direct access to adjacent land and serve travel of short distances as compared to the higher systems. Service to through traffic is discouraged.

b. Urban areas.

(1) Principal arterial. These highways are the most significant streets in the urban area that serve the major centers of activity, constitute the highest traffic volume corridors, serve the longest trip desires, carry the major portion of through traffic in the urban area, and provide continuity between rural arterials.

(2) Minor arterial. Streets which interconnect and supplement the principal arterial system with a greater emphasis on land access and a lower level of traffic mobility. They provide intracommunity service as well as connecting rural collectors to the urban highway system.

(3) Urban collector. These streets provide land access service and traffic circulation within residential, commercial, and industrial areas. They collect local traffic and distribute it to the arterial system.

(4) Local. These streets provide direct access to adjacent land and provide access to the higher systems. Service to through traffic is discouraged.

4. Procedures. The department's determination of the functional classification for each street within a subdivision shall be made prior to the resident engineer's approval of its plats or plans. To facilitate the effective development of the plats or plans and permit their expeditious review, it is recommended that this determination be completed prior to the developer's initiation of detail design for the subdivision. To originate the functional classification process, the developer shall submit the following information:

a. A sketch accurately depicting the general concept for the proposed development of the subdivision, in conformance with the applicable provisions of the governing body's zoning and subdivision regulations. This sketch shall include:

(1) The general location and configuration, including the terminus, of each street proposed within the subdivision.

(2) The location and area of each type of permitted land use within the subdivision.

(3) The location of any proposed transportation facility, within the subdivision's boundaries, included in the current comprehensive plan of the governing body.

(4) Where the governing body's zoning or subdivision regulations, or both, require submission of a conceptual plan in general conformance with the aforenoted submission, such may be acceptable for review by the resident engineer.

b. Other available information pertinent to the intended development of the subdivision.

5. Approval. The resident engineer shall provide written notification to the appropriate county official and the developer, if applicable, regarding the approved functional classification for each street in the subdivision. This approval shall be valid as long as the basic concept for the subdivision's development, as submitted pursuant to 24 VAC 30-90-130 A 4, remains unchanged.

B. Projected traffic/capacity analysis.

1. For the purposes of these requirements, "projected traffic" shall include the traffic resulting from the complete development of all land to be served by the subject roadway facility. This shall include traffic that is forecast to be generated by development, both internal and external, to the subdivision under consideration. The basis for this forecast will be the governing body's current comprehensive plan or other available information pertinent to the permitted land use and transportation planning for the subdivision and adjacent properties. Traffic projections shall be based on each single-family detached residential dwelling unit generating 10 vehicle trips per day. The trip generation rates in the ITE Trip Generation Report may be utilized in determining the projection of traffic resulting from development other than PUD and single-family detached residential. The use of other bonafide traffic studies in determining projected traffic for all types of land development may be considered, subject to their submission for review and approval by the department. In PUD developments, trip generation rates shall be developed for each type of land use and combined to determine projected traffic for each of the subdivision streets.

2. As an alternative to the application of the projected traffic to the applicable geometric design criteria of these requirements, the department will consider subdivision street design based on a capacity analysis concept provided:

a. The governing body permits the utilization of this concept in the design of subdivision streets in the county.

b. The developer furnishes full rationale, from an engineer licensed by the Commonwealth to perform such studies, to support the recommendations of this analysis. The submission shall include all pertinent traffic data and computations affecting the design proposal for the subdivision streets involved.

c. A minimum level of service "C" shall be accommodated in the street design proposed under the capacity analysis concept.

C. Terrain classification. The applicable provisions of the current Policy on Geometric Design of Highways and Streets, AASHTO, 1990, shall be used as a guide in the determination of the appropriate classification of terrain for a subdivision street. (See 24 VAC 30-90-10 for the definitions of the terrain classifications.) The following table may be used to clarify the application of those classifications.

Terrain Classification	Range of topography slopes along street alignment.
Level	0% to 8%
Rolling	8.1% to 15%
Mountainous	Greater than 15%

D. Roadway geometric design criteria. Except as permitted under 24 VAC 30-90-130 B 2, the following criteria shall apply in the design of subdivision streets intended for addition to the secondary system of state highways:

1. Any street functionally classified as "local" pursuant to subsection A of this section shall have a minimum design based on 24 VAC 30-90-380 and other applicable provisions of this chapter.

2. Streets functionally classified as a "collector" and "arterial" shall be designed in accordance with applicable provisions of the design manual and standards for the appropriate functional and terrain classification.

3. The following criteria shall apply to the design of all subdivision streets functionally classified as “local”:

a. Individual street design shall be based on projected traffic, design speed, and terrain classification.

b. Street designs shall be based on a sustained minimum level of service “C” for the projected traffic that assumes complete development of the land. To maintain this level of service, additional travel lanes, channelized roadways, etc., may be required.

c. The typical cross section for each street should be uniform between intersections. The resident engineer, as allowed under 24 VAC 30-90-70, may consider modifications in the typical section as required to satisfy changes in traffic volume or as necessary to address environmentally sensitive areas.

d. Sight distances shall be based on a height of eye of 3.5 feet *{1.07m}* and an object height of 0.5 feet *{0.15m}*, except at intersections where an object height of 4.25 feet *{1.30m}* shall be used. Sight distance easements may be required to preserve appropriate sight distance at intersections.

e. The curve data shown in 24 VAC 30-90-380 establishes the minimum horizontal control criteria used for the design of subdivision streets. Horizontally curved roadways shall be superelevated as required in 24 VAC 30-90-380 with transitions developed in accordance with department standard TC-5ULS transition requirements.

f. Roadway designs shall be broadly based on two categories:

(1) Shoulder and Ditch Design

(2) Curb and Gutter Design, further defined by the land use served by the street — residential or nonresidential.

g. Pavement width. Except as may be permitted in this subsection, the minimum pavement widths shall be as shown in 24 VAC 30-90-380, within which the term “length” shall mean the travel distance from the most distant point of trip origin to an intersecting street.

Reduction in the residential curb and gutter roadway widths shown in 24 VAC 30-90-380 may be approved by the resident engineer. Any such

reduction must be specifically requested in writing by the governing body and include its commitment to require the provision of sufficient off-street parking to accommodate normal demand for vehicular parking space. As a minimum, not less than three such spaces, exclusive of any garage or similar car shelter facility for a single-family residence, shall be provided in the proximity of the dwelling unit they are intended to serve. For the purposes of this subsection, provisions D 3 g (1) and (2) of this section shall apply only to streets that are less than 0.5 miles *{0.8km}* in length as defined above. However, provision D 3 g (3) of this section may be considered without regard to the length of street.

(1) For any street with a projected traffic of 250 ADT or less, a curb to curb width of 22 feet *{6.6m}* on a right-of-way of not less than 30 feet *{9.0m}* may be approved.

(2) For any street with a projected traffic of 251-400 ADT, a curb to curb width of 24 feet *{7.2m}* on a right-of-way of not less than 30 feet *{9.0m}* may be approved.

(3) For streets with a projected traffic between 401 and 4000 ADT, a curb to curb width of 30 feet *{9.0m}* on a right-of-way not less than 40 feet *{12.0m}* may be approved.

For nonresidential streets, no roadway width less than those shown in 24 VAC 30-90-380 may be considered.

h. Shoulder designs shall be in accordance with Standard GS-12.

i. Curb and gutter designs shall be in accordance with 24 VAC 30-90-370.

E. Bridge and culvert design criteria.

1. Capacity. All bridges and culverts shall be of HS 20-44 *{MS-18}* loading or alternate military loading, or both, in accordance with the current AASHTO bridge design specifications and VDOT modifications. To facilitate the department's review, all pertinent calculations for the structure's design shall be submitted with each bridge plan.

2. Width. Clear roadway widths of all structures shall be in accordance with the department's design manual.

F. Drainage.

1. Policy and procedures. All drainage facilities shall be designed in accordance with the department's current drainage manual and supplemental directives.

2. Criteria. Standards appropriate to the functional classification of the street and the potential impact on adjacent property shall apply.

3. Design. Specific reference is made to the following design requirements:

a. VDOT Drainage Manual.

b. VDOT Location and Design Division Instructional Memorandum for Pipe Criteria and Drainage Instructions.

c. Virginia Erosion and Sediment Control Handbook.

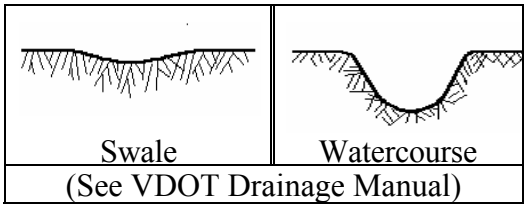
4. Storm water management.

   The department does not require storm water management in the construction of subdivision streets. However, storm water management, including the construction of detention or retention facilities, or both, is recognized as an available design alternative. Where the developer is required by regulations promulgated by an agency or governmental subdivision other than the department, or the developer chooses to use storm water management facilities in the design of a subdivision, the governing body shall, by formal agreement, acknowledge that the department is neither responsible nor liable for the storm water detention facility.

   In the development of VDOT projects, storm water management controls are based on criteria outlined in the state Stormwater Management Criteria for Controlling Off-Site Erosion (Minimum Standard #19 - Adequate Receiving Channels).

5. Easements.

   a. An acceptable easement shall be provided from all drainage outfalls to a natural watercourse, as opposed to a swale. (See 24 VAC 30-90-10 for definitions.)



   b. The department normally accepts and maintains only that portion of a drainage system that falls within the limits of the dedicated right of way for a street. However, the department may enter drainage easements outside of the dedicated right-of-way to undertake corrective measures to alleviate problems that adversely affect the roadway.

   c. An acceptable agreement from the governing body which absolves the department from any future responsibility or liability may be considered as an alternative to providing an easement.

   d. Where development activity results in increased runoff to the extent that adjustment of an outfall facility is required, such adjustment shall be at the developer's expense and contained within an appropriate easement.

6. Documentation. All drainage design computation shall be complete, properly documented and presented to the resident engineer for review.

D. Pavement structure design. The design of the pavement structure for subdivision streets shall be in accordance with the pavement design guide, including any prescribed underdrains.

24 VAC 30-90-140. Phased development of subdivision streets.

A. Policy. Certain subdivision streets may be considered for addition to the secondary system of state highways prior to their complete development in accordance with applicable provisions of these requirements.

B. Criteria.

1. The street shall be functionally classified as a "collector" or "arterial" pursuant to 24 VAC 30-90-130.

2. The traveled way of the street, upon complete development pursuant to applicable provision of these requirements, shall provide four or more lanes for motor vehicles, exclusive of turn lanes, parking lanes, etc.

3. Except as may be expressly authorized by the state secondary roads engineer, only two phases of the street's development, i.e., initial and complete, shall be permitted.

4. The governing body, by resolution, recommends the street's acceptance into the secondary system of state highways prior to its complete development.

5. The governing body elects to enter into an agreement, acceptable to the department, to assure the street's subsequent completion in full compliance with these requirements. It shall specifically include suitable provisions for each of the following issues:

   a. All cost incurred in the street's complete development, including construction, right-of-way, engineering, utility adjustment, etc., shall be provided from funds other than those derived from state revenue sources administered by VDOT, except as may be expressly authorized by the state secondary roads engineer.

   b. The governing body's assurance for the completion of the street's full development pursuant to the applicable provisions of these requirements.

   c. The governing body shall have the sole responsibility to collect and maintain any funds provided, either voluntarily or pursuant to its requirements, for the required subsequent development of the street.

   d. The determination relative to the timing of the street's complete development shall be exclusively that of the department and will be based on whichever of the following situations occurs first:

      (1) The street's actual traffic volume, as determined by the department, exceeds 8,000 ADT.

      (2) The department determines the initial phase of the street's development is incapable of permitting a minimum level of service of "D" to be maintained.

   e. Consideration for the acceptance of any street under the provisions of this section shall be limited to the phased development of only the street's roadway. All other applicable requirements, e.g., public service, drainage easements, and administrative procedures shall apply.

C. Procedures.

1. Plats or plans, or both, for the street's complete development, in accordance with all applicable provisions of these requirements, shall be submitted for approval.

2. The plats or plans shall also delineate the street's initial development as proposed pursuant to this section. In no case shall this design provide less than one-half of the roadway typical section required by the applicable requirements for the street's complete development.

3. A capacity analysis, as prescribed in 24 VAC 30-90-130 B, shall be submitted to document that a minimum level of service of "C" will be maintained by the initial roadway phase throughout its intended duration.

4. Concurrent with the submissions prescribed in provisions 1, 2, and 3 of this subsection, the developer shall request the governing body to advise the resident engineer of its recommendation for the street's phase development and of its intent to enter into the agreement prescribed in provision B 5 of this section.

5. Upon the resident engineer's determination that the proposal is in compliance with the applicable provisions of this section, he may approve the plans accordingly.

6. Upon completion of the street's initial phase in accordance with approved plans, its compliance with all other applicable provisions of 24 VAC 30-90-60 E and the governing body's execution of the prescribed agreement, the street may be accepted into the secondary system of state highways.

24 VAC 30-90-150. Right-of-way.

A. Width. A clear and unencumbered right-of-way shall be dedicated to public use for any subdivision street proposed for addition to the secondary system of state highways. For streets functionally classified as “local,” the width of such dedication shall be as specified in 24 VAC 30-90-380 or, if applicable, 24 VAC 30-90-130 D 3 g. For “local” streets based on a design speed greater than that shown in 24 VAC 30-90-380 and for streets functionally classified as "collector" or "arterial," the dedicated width shall be in accordance with applicable provisions of the department's standards and design manual.

Except as specified under this section, the widths shown in 24 VAC 30-90-380 and 24 VAC 30-90-130 D 3 g, are the minimum widths normally expected to accommodate all roadway elements, including cut and fill slopes. Unless otherwise indicated, these widths assume lawful on street parking will normally be allowed. For other required elements of a subdivision street, e.g., turn lanes, turnarounds, and median or mall type roadway separators, additional right-of-way shall also be provided as necessary to include those elements within the extremities of the right-of-way.

1. For curb and gutter sections, the limits of right-of-way shall be not less than 2.5 feet *{0.75m}* behind the back of curbs. If sidewalks are used, the limits of right-of-way shall be not less than one foot *{0.3m}* beyond the back of sidewalk.

2. For shoulder and ditch sections, additional right-of-way width in excess of the minimum specified in 24 VAC 30-90-380 may be required to accommodate roadway elements, including sidewalks and cut slopes or fill slopes or both, where applicable,

within the dedicated right-of-way. Where sidewalk which qualifies for maintenance by the department is to be provided, additional right-of-way shall be dedicated as necessary to accommodate and facilitate its future maintenance, extending not less than one foot *{0.3m}* beyond the edge of the sidewalk.

B. Utilities. To assure the unencumbered dedication of the right-of-way for subdivision street additions, easements or other interests within the platted right-of-way shall be quit-claimed of any prior rights therein. In exchange, a permit may be issued by the department for a utility to occupy the area involved. This permit will be processed by the resident engineer upon acceptance of the street into the secondary system of state highways. No inspection fee is required for permits so issued. However, the approval of the permit shall be contingent upon the utility's compliance with applicable provisions of the Permit Manual.

Underground utilities may be located within the dedicated right of way of streets. Longitudinal underground utilities should be located outside of the normal travel lanes of a street and preferably beyond the street's pavement. Installations within the parking area and the shoulders along the roadway are normally acceptable.

However, where the governing body has established adequate requirements for the design, location, and construction of underground utilities within the right-of-way for subdivision streets, they shall become the department's requirements in that area and govern, provided they are not in conflict with any applicable requirements of the department. Departmental regulations prohibit the open-cutting of hardsurfaced roads except in extenuating circumstances. Therefore, all underground utilities within the right-of-way, as determined necessary by good engineering practice to serve the complete development of adjacent properties, shall be installed during the street's initial construction and prior to the application of its final pavement surface course.

All above ground utilities shall be installed behind the sidewalk or as close as possible to the limits of the street's right-of-way.

C. "Spite strips." Plans that include a reserved or "spite" strip which prohibits otherwise lawful vehicular access to a street from the adjacent properties, whether within or outside the subdivision, will not be approved.

24 VAC 30-90-160. Surety and fees.

A. Except as otherwise provided in this section, the developer shall provide surety and fees as determined in subsection D of this section.

B. Surety.

1. Bond or cash deposit. The developer shall furnish an acceptable surety, in accordance with subsection D of this section, to guarantee the satisfactory performance of the street for a period of one year from the date of its acceptance into the secondary system of state highways. The surety may be a performance bond, cash deposit, certified check or other form mutually satisfactory to the department and the developer.

2. Alternatives to surety.

   a. In jurisdictions where the staff of the governing body administers a comprehensive subdivision construction inspection program which has been approved by the department, the surety may be waived upon certification by the governing body that the proposed addition has been constructed in accordance with approved plans and specifications.

   b. If requested by the developer and subject to availability of departmental personnel, the VDOT may perform the construction inspection of subdivision streets proposed to be added to the secondary system of state highways. In such cases, the developer shall bear all costs incurred by the department.

C. Maintenance fee. A maintenance fee, in accordance with subsection D of this section, will be required for the acceptance of a subdivision street into the secondary system at any time other than July 1. Any fraction of a month shall be computed as a whole month in arriving at the amount of fee involved.

The official acceptance date of any addition will not be made retroactive. However, where it is demonstrated that extenuating circumstances beyond the control of the developer prevented the addition's acceptance on July 1, the department may waive the maintenance fee. Administrative delays by the governing body or the department may be considered an extenuating circumstance. However, failure of the developer to comply with all applicable requirements, including the provision for the dedication of an unencumbered right-of-way, will not be considered extenuating.

D. Surety and maintenance fee schedule.

	2 - Lane Streets		4 - Lane Streets	
Mileage	Surety	Maintenance Fee	Surety	Maintenance Fee
Minimum (up to 0.25 mi.)	$3,750	$375/year	$7,500	$750/year
From 0.25 mi. To 0.50 mi.	$7,500	$750/year	$15,000	$1,500/year
Over 0.50 mi.	$1,500 per tenth mile and fraction thereof	$150 per tenth mile and fraction thereof per year	$3,000 per tenth mile and fraction thereof	$300 per tenth mile and fraction thereof per year

Examples

1. A two lane street, 0.35 miles long, is processed for addition effective September 18. Therefore, surety is required for four-tenths mile and maintenance fee is required for 10 months.

Surety required:	$7,500
Maintenance fee required:	$625

2. A four lane street, 0.78 mile long, is processed for addition effective February 4. Therefore, surety is required for eight-tenths mile and maintenance fee is required for five months.

Surety required:	0.8 x 10 x $3,000 =	$24,000
Maintenance fee required:	0.8 x 10 x $300 x 5/12 =	$1,000

D.1 Surety and Maintenance Fee Lookup Table with Metric Equivalents

This entire section is provided as an administrative supplement to the regulation.

Maintenance fees must be adjusted for the number of months in the time period covered (i.e. multiplied by a factor = (months remaining to July 1)/12), including current month.

Roadway Length Miles	Equivalent Metric Roadway Length Kilometers	2 - Lane Roadways		4 - Lane Roadways	
		Surety	Maintenance Fee	Surety	Maintenance Fee
To 0.25	To 0.40	$ 3,750	$ 375	$ 7,500	$ 750
0.26 to 0.50	0.41 to 0.80	$ 7,500	$ 750	$ 15,000	$ 1,500
0.51 to 0.60	0.81 to 0.96	$ 9,000	$ 900	$ 18,000	$ 1,800
0.61 to 0.70	0.97 to 1.12	$ 10,500	$ 1,050	$ 21,000	$ 2,100
0.71 to 0.80	1.13 to 1.28	$ 12,000	$ 1,200	$ 24,000	$ 2,400
0.81 to 0.90	1.29 to 1.44	$ 13,500	$ 1,350	$ 27,000	$ 2,700
0.91 to 1.00	1.45 to 1.60	$ 15,000	$ 1,500	$ 30,000	$ 3,000
1.01 to 1.10	1.61 to 1.76	$ 16,500	$ 1,650	$ 33,000	$ 3,300
1.11 to 1.20	1.77 to 1.92	$ 18,000	$ 1,800	$ 36,000	$ 3,600
1.21 to 1.30	1.93 to 2.08	$ 19,500	$ 1,950	$ 39,000	$ 3,900
1.31 to 1.40	2.09 to 2.24	$ 21,000	$ 2,100	$ 42,000	$ 4,200
1.41 to 1.50	2.25 to 2.40	$ 22,500	$ 2,250	$ 45,000	$ 4,500
1.51 to 1.60	2.41 to 2.56	$ 24,000	$ 2,400	$ 48,000	$ 4,800
1.61 to 1.70	2.57 to 2.72	$ 25,500	$ 2,550	$ 51,000	$ 5,100
1.71 to 1.80	2.73 to 2.88	$ 27,000	$ 2,700	$ 54,000	$ 5,400
1.81 to 1.90	2.89 to 3.04	$ 28,500	$ 2,850	$ 57,000	$ 5,700
1.91 to 2.00	3.05 to 3.20	$ 30,000	$ 3,000	$ 60,000	$ 6,000
For longer roadways, increase the fees above by an amount determined by multiplying each additional 0.1 unit of length, or portion thereof, by:					
For roadway lengths in miles		$ 1,500	$ 150	$ 3,000	$ 300
For roadway lengths in kilometers		$ 937	$ 94	$ 1,875	$ 187

1. *A two lane street, 0.56km long, is processed for addition effective September 18. Therefore, maintenance fee is required for 10 months.*

   Surety required: *$7,500*
   Maintenance fee required: *$750 x 10/12 =* *$625*

2. *A four lane street,1.25km long, is processed for addition effective February 4. Therefore, maintenance fee is required for 5 months.*

   Surety required: *$24,000*
   Maintenance fee required: *$2,400 x 5/12 =* *$1,000*

3. *A four lane street, 4.29km long, is processed for addition effective January 15. Therefore, surety is based on 4.3km and maintenance fee is required for 6 months.*

   Additional Length Factor *10x(4.3-3.2)=* *11*
   Surety required: *60000 + (1875x11)=* *$80,625*
   Maintenance fee required: *(6000+(187x11)) x 6/12 =* *$4,028*

PART III.

MISCELLANEOUS PROVISIONS.

24 VAC 30-90-170. Sidewalk.

A. The installation of sidewalk is not a requisite for the department's acceptance of a subdivision street. However, sidewalk located within the dedicated right-of-way, whose construction is either voluntary or a requirement of the governing body, may be accepted for maintenance subject to its compliance with the following criteria and standards.

Sidewalks may be accepted on (i) streets adjacent to and in the immediate vicinity of multiple businesses, public buildings, or public recreational facilities, or (ii) on subdivision streets within the specified range of the governing body's policy regarding pedestrian transportation between home and school.

B. Criteria.

1. Sidewalk on one or both sides of through streets within one mile *{1.6km}* of all existing elementary schools, and one and one-half miles *{2.4km}* of all existing intermediate and high schools, will be eligible for maintenance. This criteria shall also apply to sidewalk on streets in the vicinity of proposed schools, the construction of which is included in a county's five-year capital improvement budget.

2. Sidewalks on streets adjacent to and in the immediate vicinity of multiple commercial businesses or public facilities will be eligible for maintenance. Immediate vicinity shall mean up to 1,000 feet *{300m}* beyond zoning line.

3. Sidewalks along any permanent cul-de-sac or loop street will be eligible for acceptance only if the street is the principal route for pedestrian access to a residential area having a land use density of four or more units per acre *{0.4 hectare}* and the provisions of either provision 1 or 2 of this subsection are satisfied.

4. In situations not herein addressed, sidewalks may be approved for maintenance eligibility after individual study and joint concurrence by the resident engineer and the governing body.

C. Standards.

1. When used with a curb and gutter typical section, sidewalk shall be located as prescribed in 24 VAC 30-90-370. Sidewalk shall be constructed not less than four feet *{1.2m}* wide by four inches *{100mm}* deep, except as required by 24 VAC 30-90-370 D 2 c, on a compacted subgrade, and in accordance with the department's specifications for hydraulic cement concrete sidewalk.

On shoulder and ditch typical sections, asphalt concrete sidewalk may be acceptable when located behind the ditch line in cut sections and behind the guardrail in fill sections. Such sidewalks shall be at least four feet *{1.2m}* wide by four inches *{100mm}* deep and at a grade and elevation compatible with the adjacent roadway element. Hydraulic cement concrete sidewalk on shoulder and ditch typical sections will not normally be accepted. However, they may be approved if their construction

is on an alignment and grade considered by the resident engineer to be compatible with the eventual conversion of the street to a curb and gutter section.

On shoulder and ditch sections, construction of sidewalk within the prescribed shoulder area of the roadway will not be permitted.

2. Sidewalk underdrain shall be provided in accordance with the department's Standard UD-3.

D. Auxiliary sidewalk. Sidewalk that is deemed ineligible for department acceptance under the provisions of either subsection A or B or both of this section shall be considered an auxiliary pedestrian facility and may occupy the dedicated right-of-way of a subdivision street provided:

1. The auxiliary sidewalk is constructed to standards prescribed under subsection C of this section.

2. The liability for the auxiliary sidewalk is accepted by the governing body and the responsibility for its future maintenance is assured under terms of a permit, agreement, or other legal instrument satisfactory to the department under one of the following conditions:

a. The governing body accepts the responsibility to administer the future repair and replacement of the auxiliary sidewalk.

b. The department may administer the future repair, maintenance, or replacement of the auxiliary sidewalk upon the official request of the governing body provided it agrees to reimburse the department for all costs incurred in the associated activities.

E. Nonstandard sidewalks. Nonstandard sidewalks that meander horizontally or vertically, or both, relative to the roadway may be permitted. However, the department will not accept responsibility for their maintenance. A permit which clearly specifies the applicant's responsibility for the sidewalk's maintenance and related activities shall be obtained from the department to the extent it will encroach upon the street's right-of-way. The permit applicant shall be a county, incorporated town, or other agency which has perpetual maintenance capability. These sidewalks may be constructed of asphalt, concrete, gravel, or other stabilizer convenient to the applicant.

24 VAC 30-90-180. Intersections.

The legs of intersecting streets that will operate under a STOP or YIELD condition preferably should be at right angles. The resident engineer may require the developer to provide and install traffic control signs, in accordance with the Manual for Uniform Traffic Control Devices. Also, a relatively flat landing, of sufficient length to properly accommodate the projected traffic volume, shall be provided. (See the design manual.) Where turning volumes are significant, appropriate channelization of intersection may be required.

24 VAC 30-90-190. Guardrail.

Guardrail shall be provided and installed by the developer as necessary for the safety of the traveling public as well as protection for adjacent properties. The use of guardrail types that are aesthetically compatible with the surrounding areas should be considered. One acceptable type is "Corten" or weathering steel rail with treated timber post. Alternate types may be considered provided they (i) conform to applicable VDOT standards or the criteria prescribed in the National Cooperative Highway Research Program Report 230, (ii) blend in with their surroundings and (iii) do not create an undue maintenance problem.

24 VAC 30-90-200. Curb and gutter.

For the purpose of these requirements, the use of a curb and gutter is an acceptable alternative, rather than a requisite, for the acceptance of subdivision streets. However, where its use is required by the governing body or is otherwise desired, the curb and gutter design shall be in accordance with 24 VAC 30-90-370.

Curb-cut ramps shall be provided in accordance with § 15.1-381 of the Code of Virginia and constructed in accordance with the department's Standard CG-12.

24 VAC 30-90-210. Turn lanes.

Left or right turn lanes shall be provided at intersections when the department determines that projected turning movements warrant their installation. These facilities shall be designed in accordance with the appropriate provisions of the department's Minimum Entrance Standards. Where necessary, additional width of right-of-way shall be provided to accommodate these facilities.

24 VAC 30-90-220. Neotraditional developments.

The design of streets within neotraditional developments can be accommodated within the standards prescribed by this chapter. Therefore, any street within these types of subdivisions that is designated to become a part of the secondary system of state highways must comply with all applicable provisions of these requirements.

24 VAC 30-90-230. Concentric design.

The design of the subdivision street's principal roadway elements shall, except in extenuating circumstances, be concentric to the center of the right-of-way. No variance from the appropriate typical section will be permitted except as necessary to provide for vehicular safety and traffic channelization features, e.g., turn lanes, intersection radius, etc.

24 VAC 30-90-240. Cul-de-sacs and turnarounds.

An adequate turnaround facility shall be provided at the end of each cul-de-sac street to permit the safe and convenient maneuvering by service vehicles. To afford the greatest flexibility in design, various types of turnaround designs may be approved. (For examples, see the Policy on Geometric Design of Highways and Streets, AASHTO.) Additional right-of-way shall be provided as required

by the turnaround design. Any nontraveled way areas included within turnarounds, such as islands, shall be included in the dedicated right-of-way of the facility.

For circular turnarounds, a well-defined, identifiable street segment shall extend from the intersected street to the beginning of the radial portion of the turnaround. The length of this segment shall equal the normal lot width along the intersected street which serves the cul-de-sac. A minimum radius, measured to the edge of pavement or face of curb, of 30 feet *{9m}* shall be used for circular turnarounds on residential cul-de-sac streets planned to serve 25 or fewer dwelling units. For circular turnarounds on all other residential cul-de-sac streets, as well as any nonresidential cul-de-sac street, a minimum pavement radius of 45 *{13.5m}* feet shall be used.

24 VAC 30-90-250. Dams.

Subdivision streets which cross a dam may be eligible for acceptance into the secondary system of state highways subject to the following criteria:

1. The right of way across the dam is recorded as either an easement for public road purposes or is dedicated specifically to the governing body. Right of way that includes a dam and which is dedicated in the name of the Commonwealth or any of its agencies is not acceptable and roads through such right of way will not be accepted as a part of the secondary system of state highways.
2. An appropriate alternate roadway facility for public ingress and egress, with suitable provisions to assure its perpetual maintenance, is provided.
3. An engineer, licensed to practice in the Commonwealth of Virginia, certifies that the dam's hydraulic and structural design is in accordance with current national engineering practice.
4. Applicable federal and state permits must be secured prior to VDOT acceptance of the street.
5. Protection of the roadway from inundation shall be provided as herein prescribed by these requirements. Flow of water over the roadway is not acceptable as an emergency spillway.
6. VDOT maintenance responsibilities shall be limited to the roadway surface and related elements. The maintenance of the dam shall be the responsibility of the owner, other than VDOT, as established by § 33.1-176 of the Code of Virginia.
7. The governing body shall provide the department with an acceptable agreement, which acknowledges the department’s liability is limited to the maintenance of the roadway and its related elements and that the department has no responsibility or liability due to the presence of the dam.

24 VAC 30-90-260. Railroad crossing.

Short-arm gates with flashing signals, flashing signals alone, or other protective devices as deemed appropriate by VDOT, shall be provided by any at-grade crossing of an active railroad by a subdivision street. Prior to the execution of the agreement between the railroad and the developer or the governing body, regarding the construction or maintenance of any at-grade crossing, bridge, or signal device, it shall be reviewed and approved by the department, which will coordinate a concurrent review with the Department of Rail and Public Transportation. This agreement shall be fully executed prior to the street's acceptance into the secondary system.

24 VAC 30-90-270. Private entrances.

All private entrances shall be designed and constructed in accordance with the applicable standard. For shoulder and ditch typical section streets, the department's Standard PE-1 shall be utilized. All entrance pipe culverts shall be sized to accommodate the run off expected from a 10-year frequency storm. On streets with curb and gutter, the appropriate entrance gutter, as prescribed by the standards, shall be provided.

24 VAC 30-90-280. Parking.

Perpendicular and angle parking along subdivision streets shall be prohibited.

Street designs that anticipate the restriction of on street parking shall only be approved with the consent of the county official and the resident engineer.

In the absence of local regulations that are deemed acceptable by the department, the following criteria shall apply for the design of subdivision streets:

1. A minimum of two off-street parking spaces per dwelling unit shall be provided in the proximity of the unit they are intended to serve. Additional off-street parking space shall be provided when the width of any residential curb and gutter roadway is proposed for reduction under the provisions of 24 VAC 30-90-130 D 3 g and as specified therein.

2. If parking bays are provided, they shall be located off the street’s right-of-way and designed to prevent vehicles from backing into the adjacent subdivision street.

3. Entrances to parking bays shall be separated by at least 50 feet *{15m}* and designed in accordance with the appropriate provisions of the standards or Permit Manual.

24 VAC 30-90-290. Landscaping.

All disturbed areas within the dedicated right-of-way and easements of any subdivision street shall be restored with a vegetation compatible with the surrounding area. No street will be accepted into the secondary system of state highways where there is visual evidence of erosion or siltation unless appropriate protective measures, in accordance with VDOT's construction practices, have been taken. Any planting of trees or shrubs shall be in accordance with the department's current Guidelines for Planting Along Virginia's Roadways, Environmental Division.

24 VAC 30-90-300. Encroachments and extrinsic structures.

Posts, walls, signs, or similar ornamental devices that do not interfere with roadway capacity or traffic safety may be permitted within the right-of-way. However, specific authorization by a permit issued by the department is a requisite for these devices or any other encroachment to be located within the right-of-way.

No street that includes an extrinsic structure within the right-of-way will be accepted as part of the secondary system of state highways unless the local governing body provides the department with an acceptable agreement that acknowledges the department has no responsibility or liability due to the presence of the structure and assures the costs of inspection, maintenance, and future improvements to the structure are provided from sources other than those administered by the department.

24 VAC 30-90-310. Lighting.

Where roadway, security, or pedestrian lighting is required by the governing body or desired by the developer, it shall be installed in accordance with the department's Guidelines for Lighting by Permit on State Right-of-Way (No. M-245-87), Maintenance Division and department policy concerning lighting.

24 VAC 30-90-320. Noise abatement.

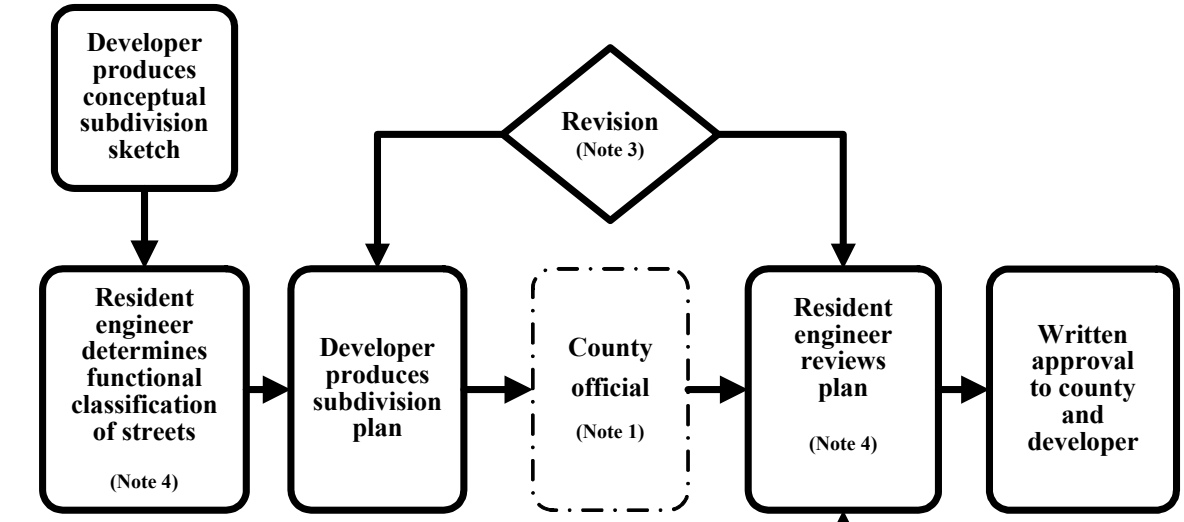
Where applicable, the governing body and the developer are reminded of the board's adoption, on August 18, 1988, of the State Noise Abatement Policy which applies to nonfederal-aid highway construction and improvement projects.

24 VAC 30-90-330. Effective date and transition.

These requirements are effective as of January 1, 1996; provided, however, that during the period of January 1, 1996, through June 30, 1996, the department will consider approval of streets designed in accordance with either the former requirements (1990) or with these requirements. Any street design initially submitted for approval by the department after June 30, 1996, shall be in accordance with these requirements.

PART IV.
REFERENCE SECTION.

24 VAC 30-90-340. Subdivision street plan review procedure.



Notes

1. Depending on the individual county's ordinance, plan may be submitted to county official or directly to resident engineer.

2. Referral to district and central offices will occur only if the complexity of the subdivision plan requires such review.

3. Plan will be returned to the developer if revision is required (for minor revisions, the revised plan will receive priority review when resubmitted).

4. Plan review for subdivision development in counties of Fairfax, Loudoun, and Prince William is performed in the Northern Virginia District Office.

24 VAC 30-90-350. Offices of the Virginia Department of Transportation.

Residency and district offices are located in or near the localities or cities shown.

County Served	Residency	District
Accomack	Accomac	Suffolk
Albemarle	Charlottesville	Culpeper
Alleghany	Lexington	Staunton
Amelia	Amelia	Richmond
Amherst	Amherst	Lynchburg
Appomattox	Appomattox	Lynchburg
Augusta	Verona	Staunton
Bath	Lexington	Staunton
Bedford	Bedford	Salem
Bland	Tazewell	Bristol
Botetourt	Salem	Salem
Brunswick	South Hill	Richmond
Buchanan	Lebanon	Bristol
Buckingham	Dillwyn	Lynchburg
Campbell	Appomattox	Lynchburg
Caroline	Bowling Green	Fredericksburg
Carroll	Hillsville	Salem
Charles City	Sandston	Richmond
Charlotte	Halifax	Lynchburg
Chesterfield	Chesterfield	Richmond
City of Suffolk	Suffolk	Suffolk
Clarke	Luray	Staunton
Craig	Salem	Salem
Culpeper	Culpeper	Culpeper
Cumberland	Dillwyn	Lynchburg
Dickenson	Wise	Bristol
Dinwiddie	Petersburg	Richmond
Essex	Bowling Green	Fredericksburg
Fairfax	Fairfax	Northern Virginia
Fauquier	Warrenton	Culpeper
Floyd	Hillsville	Salem
Fluvanna	Louisa	Culpeper
Franklin	Rocky Mount	Salem
Frederick	Edinburg	Staunton
Giles	Christiansburg	Salem
Gloucester	Saluda	Fredericksburg
Goochland	Ashland	Richmond
Grayson	Wytheville	Bristol
Greene	Charlottesville	Culpeper
Greensville	Franklin	Suffolk
Halifax	Halifax	Lynchburg
Hanover	Ashland	Richmond
Henry	Martinsville	Salem
Highland	Verona	Staunton
Isle of Wight	Suffolk	Suffolk
James City	Williamsburg	Suffolk
King & Queen	Saluda	Fredericksburg
King George	Fredericksburg	Fredericksburg
King William	Bowling Green	Fredericksburg
Lancaster	Warsaw	Fredericksburg
Lee	Jonesville	Bristol
Loudoun	Leesburg	Northern Virginia
Louisa	Louisa	Culpeper
Lunenburg	Amelia	Richmond
Madison	Culpeper	Culpeper
Mathews	Saluda	Fredericksburg
Mecklenburg	South Hill	Richmond
Middlesex	Saluda	Fredericksburg
Montgomery	Christiansburg	Salem
Nelson	Amherst	Lynchburg
New Kent	Sandston	Richmond
Northampton	Accomac	Suffolk
Northumberland	Warsaw	Fredericksburg
Nottoway	Amelia	Richmond
Orange	Culpeper	Culpeper
Page	Luray	Staunton
Patrick	Martinsville	Salem
Pittsylvania	Chatham	Lynchburg
Powhatan	Chesterfield	Richmond
Prince Edward	Dillwyn	Lynchburg
Prince George	Petersburg	Richmond
Prince William	Manassas	Northern Virginia
Pulaski	Christiansburg	Salem
Rappahannock	Warrenton	Culpeper
Richmond	Warsaw	Fredericksburg
Roanoke	Salem	Salem
Rockbridge	Lexington	Staunton
Rockingham	Harrisonburg	Staunton
Russell	Lebanon	Bristol
Scott	Jonesville	Bristol
Shenandoah	Edinburg	Staunton
Smyth	Abingdon	Bristol
Southampton	Franklin	Suffolk
Spotsylvania	Fredericksburg	Fredericksburg
Stafford	Fredericksburg	Fredericksburg
Surry	Waverly	Suffolk
Sussex	Waverly	Suffolk
Tazewell	Tazewell	Bristol
Warren	Luray	Staunton
Washington	Abingdon	Bristol
Westmoreland	Warsaw	Fredericksburg
Wise	Wise	Bristol
Wythe	Wytheville	Bristol
York	Williamsburg	Suffolk

24 VAC 30-90-360. Listing of documents (publications) incorporated by reference.

Information pertaining to the availability and cost of any of these publications should be directed to the address indicated below the specific document. Requests for documents available from the department, indicated as "(VDOT)," may be obtained from the department's division and representative indicated, by writing to:

Virginia Department of Transportation, 1401 East Broad Street, Richmond, Virginia 23219.

1. Drainage Manual (January 1, 1980)
   Location and Design Division (VDOT)
   Location and Design Engineer
2. Guidelines for Lighting by Permit on State Right of Way (October 15, 1987)
   Maintenance Division (VDOT)
   Maintenance Engineer
3. Guidelines for Planting Along Virginia's Roadways (1986)
   Environmental Division (VDOT)
   Environmental Engineer
4. "ITE Trip Generation," (5th edition, 1991) Information Report of the Institute of Transportation Engineers
   Institute of Transportation Engineers
   School Street, S.W., Suite 410
   Washington, DC 20024-2729
5. Highway Capacity Manual (1994) Transportation Research Board, Special Report 209
   Transportation Research Board
   Constitution Avenue, N.W.
   Washington, DC 20418
6. Land Use Permit Manual (1985)
   Maintenance Division (VDOT)
   Maintenance Engineer
7. Manual on Uniform Traffic Control Devices for Streets and Highways (1988 edition)
   United State Department of Transportation
   Superintendent of Documents
   U. S. Government Printing Office,
   Washington, DC 20402
8. The Virginia Supplement to the Manual on Uniform Traffic Control Devices for Streets and Highways, (November, 1980)
   Traffic Engineering Division (VDOT)
   State Traffic Engineer
9. Minimum Standards of Entrances to State Highways (March 29, 1989)
   Traffic Engineering Division (VDOT)
   State Traffic Engineer

10. National Cooperative Highway Research Program Report 230 (1981), Transportation Research Board
    Transportation Research Board
    Constitution Avenue, N.W.
    Washington, DC 20418

11. Pavement Design Guide for Subdivision and Secondary Roads in Virginia (1993)
    Materials Division (VDOT)
    State Materials Engineer

12. Policy on Geometric Design of Highways and Streets (1990) *{1994, metric}*, AASHTO
    American Association of State Highway and Transportation Officials
    North Capital Street, Suite 225
    Washington, DC 20001

13. Road and Bridge Specifications (January, 1994)
    Construction Division (VDOT)
    Construction Engineer

14. Road Design Manual (May 1, 1990) and Road and Bridge Standards (January 1, 1993) *{January 1, 1994, metric}*
    Location and Design Division (VDOT)
    Location and Design Engineer

15. Standard Specifications for Highway Bridges (14th edition, 1989), AASHTO
    American Association of State Highway and Transportation Officials
    North Capital Street, Suite 225
    Washington, DC 20001

    VDOT Modifications
    Bridge and Structure Division (VDOT)
    Structure and Bridge Engineer

16. Virginia Erosion and Sediment Control Handbook (3rd edition - 1992), Division of Soil and Water Conservation with The Virginia Erosion and Sediment Control Law and Regulations (September 13, 1990)
    Division of Soil and Water Conservation
    Governor Street, Suite 206
    Richmond, Virginia 23219

24 VAC 30-90-370. Acceptable curb and gutter designs.

A. Design. Use of curb and gutter shall be subject to the design speed and traffic volume of the adjacent roadway as follows:

1. Standard Curb CG-6 may only be with design speeds of 40 mph *{70 km/h}* or less without regard to traffic volume.
2. Standard Curb CG-7 must be used with design speeds greater than 40 mph *{70 km/h}* without regard to traffic volume.
3. Roll Top Curb may only be used with design speeds of 40 mph *{70 km/h}* or less and provided the street has a projected traffic volume not greater than 1000.

B. Drainage. Where the roll top curb and gutter section is used, drop inlets must be spaced so that the 10-year frequency gutter flow does not exceed four inches *{100mm}*.

C. Construction. The bottom of the curb and gutter may be constructed parallel to the slope of subsurface courses, provided a minimum depth of seven inches *{175mm}* is maintained. On any segment of a street, only one curb and gutter design may be used. Roll top curb and gutter shall be constructed with approved slip form type of equipment, designed for that type of installation.

D. Pedestrian considerations.

1. Where curb and gutter is used without a sidewalk facility, a relatively flat, graded area, at least 2.5 feet *{0.75 m}* in width, shall be provided behind the back of curb.
2. Where sidewalk is used in conjunction with curb and gutter the following shall apply:
   a. Standard CG-6 - Sidewalk may abut the back of curb.
   b. Standard CG-7 - A separation, not less than three feet *{0.9m}* in width, shall be provided between the back of curb and sidewalk.
   c. Roll Top - A separation, not less than three feet *{0.9m}* in width, shall be provided between the back of curb and sidewalk. Further, roll top curb may only be used adjacent to sidewalk that has a minimum thickness of seven inches *{180mm}* where crossed by driveways.

E. Driveway entrances. Standard entrance gutter (Std. CG-9A through CG-9D) shall be used with Standard CG-6 and CG-7 curb and gutter.

STD. CG-6

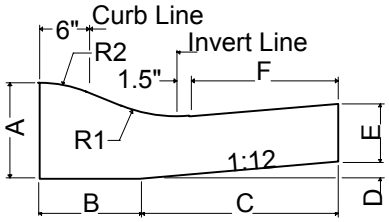
See design manual for dimensions.

STD. CG-7

See design manual for dimensions.

ROLL TOP

{6" at top of curb ≈ 155mm }
{1.5" at invert line ≈ 40mm}



Dimensions

A	11.5 in	*{290mm}*
B	1 ft 0 in	*{310mm}*
C	2 ft 0 in	*{610mm}*
D	2 in	*{50mm}*
E	7 in	*{180mm}*
F	1 ft 6 in	*{460mm}*
R1	1 ft 6 in	*{460mm}*
R2	1 ft 3 in	*{380mm}*

24 VAC 30-90-380 TABLE 1 - GEOMETRIC DESIGN GUIDE FOR SUBDIVISON STREETS FUNCTIONALLY CLASSIFIED AS LOCAL

ENGLISH MEASUREMENTS ALL UNITS ARE IN FEET, MPH, OR DEGREES			HORIZONTAL & VERTICAL CONTROL Maximum Cut or Fill Slope = 2:1						ROADWAY SECTION CRITERIA							
									SHOULDER & DITCH ROADWAYS				CURB AND GUTTER ROADWAYS			
													RESIDENTIAL		NON-RESIDENTIAL	
									SLOPE OF DITCH AND MINIMUM WIDTH SHALL BE BASED ON SLOPES OF 3:1 TO PROVIDE A WIDTH OF 4 FEET OR MORE.				MINIMUM ROADWAY (c-c) AND RIGHT-OF-WAY (ROW) WIDTHS SHALL BE BASED ON THE LENGTH OF STREET AND SPECIAL REQUIREMENTS REGARDING OFF-STREET PARKING, SEE 24 VAC 30-90-130 D.3.g. AND 24 VAC 30-90-280			
PROJECTED TRAFFIC VOLUME	TERRAIN	DESIGN SPEED	CURVE DATA			SUGGESTED % GRADE	SIGHT DISTANCE MINIMUM		PAVEMENT WIDTH	RIGHT OF WAY	SHOULDER WIDTH (MINIMUM)		LENGTH UNDER 0.5 MILES	LENGTH 0.5 MILES OR MORE	LENGTH NOT A FACTOR	
(ADT)		(MPH) (MIN.)	RADIUS (MIN.)	DEG. MAX	SUPER-ELEVATION		STOPPING	@ INTER-SECTIONS	(MINIMUM)	WIDTH (MIN.)	FILL W/ GR	CUT OR FILL W/O GR	PARKING ALLOWED		PARKING RESTRICTED	PARKING ALLOWED
	LEVEL		120	48°		7										
UP TO 250	ROLLING	20	120	48°	NONE	10	125	200	18	40	7	4	cc = 28	cc = 30	cc = 24	cc = 30
	MOUNTAINOUS		95	60°		16							ROW = 40	ROW = 40	ROW = 40	ROW = 40
	LEVEL		120	48°		7										
251-400	ROLLING	20	120	48°	NONE	10	125	200	20	50	7	4	cc = 28	cc = 30	cc = 24	cc = 30
	MOUNTAINOUS		95	60°		16							ROW = 40	ROW = 40	ROW = 40	ROW = 40
	LEVEL					7			22							
401-1000	ROLLING	25	180	32°	NONE	10	150	250	22	50	7	4	cc = 36	cc = 36	N/A	cc = 38
	MOUNTAINOUS					16			20				ROW = 44	ROW = 44		ROW = 46
	LEVEL					7			22							
1001-2000	ROLLING	30	300	19°	NONE	10	200	300	22	50	9	6	cc = 36	cc = 36	N/A	cc = 38
	MOUNTAINOUS					14			20				ROW = 44	ROW = 44		ROW = 46
	LEVEL					7										
2001-4000	ROLLING	30	300	19°	NONE	10	200	300	22	50	9	6	cc = 38	cc = 38	N/A	cc = 40
	MOUNTAINOUS					14							ROW = 46	ROW = 46		ROW = 48
	LEVEL	40	535	10.5°	RATE =	7	275	400								
OVER 4000	ROLLING	40	535	10.5°	STD.	9	275	400	24	50	9	6	cc = 40	cc = 40	N/A	cc = 40
	MOUNTAINOUS	30	250	23°	CROWN	14	200	300					ROW = 48	ROW = 48		ROW = 48

24 VAC 30-90-380 TABLE 1 {METRIC} - GEOMETRIC DESIGN GUIDE FOR SUBDIVISON STREETS FUNCTIONALLY CLASSIFIED AS LOCAL

ACCEPTABLE METRIC UNITS ALL UNITS ARE IN METERS (m) OR KILOMETERS/HOUR (km/h)			**HORIZONTAL & VERTICAL CONTROL** **Maximum Cut or Fill Slope = 2:1**					**ROADWAY SECTION CRITERIA** **SHOULDER & DITCH ROADWAYS** SLOPE OF DITCH AND MINIMUM WIDTH SHALL BE BASED ON SLOPES OF 3:1 TO PROVIDE A WIDTH OF 1.2m OR MORE.				**CURB AND GUTTER ROADWAYS** MINIMUM ROADWAY (c-c) AND RIGHT-OF-WAY (ROW) WIDTHS SHALL BE BASED ON THE LENGTH OF STREET AND SPECIAL REQUIREMENTS REGARDING OFF-STREET PARKING, SEE 24 VAC 30-90-130 D.3.g. AND 24 VAC 30-90-280			
												RESIDENTIAL		**NON-RESIDENTIAL**	
PROJECTED TRAFFIC VOLUME	TERRAIN	DESIGN SPEED	CURVE DATA		SUGGESTED % GRADE	SIGHT DISTANCE MINIMUM		PAVEMENT WIDTH	RIGHT OF WAY	SHOULDER WIDTH (MINIMUM)		LENGTH UNDER 0.80 km	LENGTH 0.80 km OR MORE	LENGTH NOT A FACTOR	
(ADT)		km/h (MIN.)	RADIUS (MIN.)	SUPER-ELEVATION		STOPPING	@ INTER-SECTIONS	(MINIMUM)	WIDTH (MIN.)	FILL W/ GR	CUT OR FILL W/O GR	PARKING ALLOWED		PARKING RESTRICTED	PARKING ALLOWED
	LEVEL		40		7										
UP TO 250	ROLLING	30	40	NONE	10	30	55	5.4	12	2.1	1.2	cc = 8.4	cc = 9.0	cc = 7.2	cc = 9.0
	MOUNTAINOUS		25		16							ROW = 12.0	ROW = 12.0	ROW = 12.0	ROW = 12.0
	LEVEL		40		7										
251-400	ROLLING	30	40	NONE	10	30	55	6.0	15	2.1	1.2	cc = 8.4	cc = 9.0	cc = 7.2	cc = 9.0
	MOUNTAINOUS		25		16							ROW = 12.0	ROW = 12.0	ROW = 12.0	ROW = 12.0
	LEVEL				7			6.6							
401-1000	ROLLING	40	55	NONE	10	45	75	6.6	15	2.1	1.2	cc = 10.8	cc = 10.8	N/A	cc = 11.4
	MOUNTAINOUS				16			6.0				ROW = 13.2	ROW = 13.2		ROW = 13.8
	LEVEL				7			6.6							
1001-2000	ROLLING	50	105	NONE	10	58	95	6.6	15	2.7	1.8	cc = 10.8	cc = 10.8	N/A	cc = 11.4
	MOUNTAINOUS				14			6.0				ROW = 13.2	ROW = 13.2		ROW = 13.8
	LEVEL				7										
2001-4000	ROLLING	50	105	NONE	10	58	95	6.6	15	2.7	1.8	cc = 11.4	cc = 11.4	N/A	cc = 12.0
	MOUNTAINOUS				14							ROW = 13.8	ROW = 13.8		ROW = 14.4
	LEVEL	60	140	RATE =	7	75	115								
OVER 4000	ROLLING	60	140	STD.	9	75	115	7.2	15	2.7	1.8	cc = 12.0	cc = 12.0	N/A	cc = 12.0
	MOUNTAINOUS	50	85	CROWN	14	58	95					ROW = 14.4	ROW = 14.4		ROW = 14.4